

failure of one branch circuit does not leave an area without light.

(c) *Illumination of passenger and crew spaces.* (1) Each space used by passengers or crew must be fitted with lighting that provides for a safe habitable and working environment under normal conditions.

(2) Sufficient illumination must be provided by the emergency lighting source under emergency conditions to effect damage control procedures and to provide for safe egress from each space.

(d) *Berth lights.* Each crew berth must have a fixed berth light that is not wired with a flexible cord. The berth light must have minimum horizontal projection so that the light may not be covered with bedding.

(e) *Exit lights.* Each exit light required on passenger vessels under § 112.15-1 of this subchapter must have the word "Exit" in red block letters at least 2 inches (50 mm) high.

(f) *Pilot ladders.* There must be a means for lighting each station from which a pilot may be deployed.

[CGD 74-125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94-108, 61 FR 28282, June 4, 1996]

§ 111.75-16 Lighting of survival craft and rescue boats.

(a) During preparation, launching, and recovery, each survival craft and rescue boat, its launching appliance, and the area of water into which it is to be launched or recovered must be adequately illuminated by lighting supplied from the emergency power source.

(b) The arrangement of circuits must be such that the lighting for adjacent launching stations for survival craft or rescue boats is supplied by different branch circuits.

[CGD 94-108, 61 FR 28282, June 4, 1996]

§ 111.75-17 Navigation lights.

Each navigation light system must meet the following:

(a) *Feeders.* On vessels required to have a final emergency power source by § 112.05-5(a) of this chapter, each navigation light panel must be supplied by a feeder from the emergency switchboard (see § 112.43-13). The feeder must

be protected by overcurrent devices rated or set at a value of at least twice that of the navigation light panel main fuses.

(b) *Navigation light indicator panel.* Each self-propelled vessel must have a navigation light indicator panel in the navigating bridge to control side, masthead, and stern lights. The panel must visually and audibly signal the failure of each of these navigation lights. Each light source must be connected to a separate fused branch circuit. The panel must have a fused feeder disconnect switch, and the fuses must have at least twice the rating of the largest branch circuit fuse and must be greater than the maximum panel load.

(c) *Dual light sources.* Each self-propelled vessel must have duplicate light sources for the side, masthead, and stern lights.

(d) *Navigation lights.* Each navigation light must meet the following:

(1) Meet the technical details of the applicable navigation rules.

(2) Be certified by an independent laboratory to the requirements of UL 1104 or an equivalent standard under § 110.20-1 of this chapter. Portable battery powered lights need meet only the requirements of the standard applicable to those lights.

(3) Be labeled with a label stating the following:

(i) "MEETS _____." (Insert the identification name or number of the standard under paragraph (d)(2) of this section to which the light was type-tested.)

(ii) "TESTED BY _____." (Insert the name or registered certification mark of the independent laboratory that tested the fixture to the standard under paragraph (d)(2) of this section).

(iii) Manufacturer's name.

(iv) Model number.

(v) Visibility of the light in nautical miles.

(vi) Date on which the fixture was type-tested.

(vii) Identification of bulb used in the compliance test.

(4) If it is a flashing light, have its intensity determined by the formula:

$$I_e = G / (0.2 + t_2 - t_1)$$

Where

Ie=Luminous Intensity.

G=Integral of Idt evaluated between the limits of t1 and t2.

t1=Time in seconds of the beginning of the flash.

t2=Time in seconds of the end of the flash.

I=Instantaneous intensity during the flash.

NOTE: The limits, t1 and t2, are to be chosen so as to maximize Ie.

(e) *Installation of navigation lights.* Each navigation light must:

(1) Be installed so that its location and its angle of visibility meet the applicable navigation rules;

(2) Except as permitted by the applicable navigation rules, be arranged so that light from a navigation light is not obstructed by any part of; the vessel's structure or rigging;

(3) Be wired by a short length of heavy-duty, flexible cable to a watertight receptacle outlet next to the light or, for permanently mounted fixtures, by direct run of fixed cable; and

(4) If it is a double-lens, two-lamp type, have each lamp connected to its branch circuit conductors either by an individual flexible cable and watertight receptacle plug or, for permanently mounted fixtures, by an individual direct run of fixed cable.

[CGD 74-125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94-108, 61 FR 28282, June 4, 1996; 61 FR 33045, June 26, 1996; 62 FR 23909, May 1, 1997]

§ 111.75-18 Signaling lights.

Each self-propelled vessel over 150 gross tons when engaged on an international voyage must have on board an efficient daylight signaling lamp that may not be solely dependent upon the vessel's main source of electrical power and that meets the following:

(a) The axial luminous intensity of the beam must be at least 60,000 candelas.

(b) The luminous intensity of the beam in every direction within an angle of 0.7 degrees from the axial must be at least 50 percent of the axial luminous intensity.

[CGD 94-108, 61 FR 28282, June 4, 1996]

§ 111.75-20 Lighting fixtures.

(a) The construction of each lighting fixture for a non-hazardous location must meet—

(1) UL 595, until May 3, 1999;

(2) UL 1570, UL 1571, or UL 1572, as applicable, including marine supplement; or

(3) IEC 92-306.

(b) Each fixture globe, lens, or diffuser must have a high strength guard or be made of high strength material, except in an accommodation space, navigating bridge, gyro room, radio room, galley, or similar space where it is not subject to damage.

(c) No fixture may be used as a connection box for a circuit other than the branch circuit supplying the fixture.

(d) Lighting fixtures must be installed as follows:

(1) Each fixture in the weather or in a location exposed to splashing water must be watertight. Each fixture in a damp or wet location must at least be dripproof.

(2) Each fixture and lampholder must be fixed. A fixture must not be supported by the screw shell of a lampholder.

(3) Each pendent-type fixture must be suspended by and supplied through a threaded, rigid conduit stem.

(4) Each tablelamp, desk lamp, floorlamp, and similar equipment must be secured in place so that it cannot be displaced by the roll or pitch of the vessel.

(e) Non-emergency and decorative interior lighting fixtures in environmentally-protected, non-hazardous locations need only meet the applicable UL type-fixture standards in UL 1570 through 1574 (and either the general section of the marine supplement or the general section of UL 595), UL 595, or IEC 92-306. These fixtures must have vibration clamps on fluorescent tubes longer than 102 cm (40 inches), secure mounting of glassware, and rigid mounting.

[CGD 74-125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94-108, 61 FR 28283, June 4, 1996; 61 FR 36787, July 12, 1996; 62 FR 23909, May 1, 1997]